

# AccuReview

An Independent Review Organization  
(903) 749-4231  
(888) 492-8305

Notice of Independent Review Decision

**DATE OF REVIEW:** OCTOBER 9, 2011

**IRO CASE #:**

## **DESCRIPTION OF THE SERVICE OR SERVICES IN DISPUTE**

In patient surgery LOS 4-5 Days / Surgery request Right TKR [Total Knee Replacement]. CPT Codes: 27447 / ICD9 Codes: 716.16, 715.16

## **A DESCRIPTION OF THE QUALIFICATIONS FOR EACH PHYSICIAN OR OTHER HEALTH CARE PROVIDER WHO REVIEWED THE DECISION**

This physician is a Board Certified Orthopedic Surgeon with over 40 years of experience.

## **REVIEW OUTCOME**

Upon independent review the reviewer finds that the previous adverse determination/adverse determinations should be:

- Upheld (Agree)
- Overturned (Disagree)
- Partially Overturned (Agree in part/Disagree in part)

Provide a description of the review outcome that clearly states whether or not medical necessity exists for each of the health care services in dispute.

## **INFORMATION PROVIDED TO THE IRO FOR REVIEW**

10-20-2008: Medical Report by MD

12-18-2008: Medical Report by MD

7-14-2011: Medical Report by MD

7-25-2011: Pre Authorization Request

8-9-2011: MD performed an UR on the claimant

8-26-2011: MD performed an UR on the claimant

### **PATIENT CLINICAL HISTORY [SUMMARY]:**

gentlemen with a history of problems associated with the right knee after an injury while working on a job on xx/xx/xxxx. He has progressively deteriorating pain. His radiographs show advanced degenerative arthritis with varus and medial arthritis plus all the other compartments. He has received corticosteroid injections as well as Euflexxa injections. He is also functionally debilitated that is affecting his work as an electrician.

10-20-2008: The claimant was evaluated by MD. Physical examination revealed: ROM was 5 to 110 degrees, mild effusion, patellofemoral crepitus, negative Lachman test, palpable osteophytes and stable PCL, MCL, FCL. X-rays were consistent with grade IV = severe change, characterized by marked joint space narrowing with bone on bone contact with large osteophytes. Assessment: Osteoarthritis (worsening) secondary to prior injury.

12-17-2008: The claimant was seen for a follow up evaluation of the right knee with Dr. It was noted the claimant brought in an email that notes that an MRI of the right knee was obtained in October, 1999. It was consistent with tear of the medial meniscus, posterior horn and mid substance and evidence of chondromalacia involving the medial lateral patellofemoral compartments. Given the fact that the claimant had an injury and anatomically he had torn the medial meniscus as a result of that injury, and that he now has advanced degenerative changes associated with the knee, and the known importance of the anatomical presence of a normal meniscus, it was Dr. impression that the degenerative changes that are now present are secondary to the claimant's injury.

7-14-2011: The claimant was evaluated by MD. Physical examination revealed: Motion of the right knee is from 5 degrees lack of full extension to 110 degrees of flexion. There is no instability on the medial and a lateral collateral ligament in extension, mid flexion or terminal flexion. He has negative straight leg raising signs. Range of motion of both hips - flexion 120 degrees, extension 0, abduction 40 degrees and external rotation 40 degrees. Physical examination also reveals that he is 6'1" tall and 253lb, with a body mass index of 33.38. Impression: Advanced degenerative arthritis post on the job traumatic injury over last 13 years. Knee society score-pain 10, motion 20, stability 25; total 55. Functional score- walking 40, stairs 3-; total 70. Plan: Knee replacement surgery with a hospital stay of three to four days followed by home physical therapy and visiting nurse by one month. Outpatient physical therapy for an additional two to three months.

8-9-2011: MD performed an UR on the claimant. Rationale for Denial: Claimant dose meet criteria to proceed with a total knee replacement according to the Official Disability

Guidelines for a total knee replacement. However, the requested length of stay of four to five days exceeds ODG for a total knee replacement of three days.

8-26-11: MD performed an UR on the claimant. Rationale for Denial: The requested four to five day length of stay following knee replacement cannot be recommended as medically necessary; this exceeds typical ODG which indicate a best practice target of three days. Though in this case it would appear that this claimant is a candidate for the knee replacement surgery, in the absence of physician discussion to discuss the requested length of stay, the request as a whole cannot be justified as medically necessary according to the guidelines based on the information reviewed.

### **ANALYSIS AND EXPLANATION OF THE DECISION INCLUDE CLINICAL BASIS, FINDINGS AND CONCLUSIONS USED TO SUPPORT THE DECISION.**

The prior decisions are partially overturned. Per the Official Disability Guidelines (ODG) the claimant does meet the criteria for a Total Knee Replacement. The claimant has a body mass index of 33. He has received both steroid injections and visco supplementation. He has limited range of motion and no relief with conservative care. His radiographs also demonstrated advanced osteoarthritis of the medial knee joint with varus deformity. Therefore, he does meet the criteria to proceed with a total knee replacement and the denial of the total knee replacement is overturned.

Denial of the requested length of stay for four to five days is upheld. This length of stay exceeds the ODG hospital length of stay guidelines of three days for a total knee replacement.

#### **ODG:**

Recommended as indicated below. Total hip and total knee arthroplasties are well accepted as reliable and suitable surgical procedures to return patients to function. The most common diagnosis is osteoarthritis. Overall, total knee arthroplasties were found to be quite effective in terms of improvement in health-related quality-of-life dimensions, with the occasional exception of the social dimension. Age was not found to be an obstacle to effective surgery, and men seemed to benefit more from the intervention than did women. ([Ethgen, 2004](#)) Total knee arthroplasty was found to be associated with substantial functional improvement. ([Kane, 2005](#)) Navigated knee replacement provides few advantages over conventional surgery on the basis of radiographic end points. ([Bathis, 2006](#)) ([Bauwens, 2007](#)) The majority of patients who undergo total joint replacement are able to maintain a moderate level of physical activity, and some maintain very high activity levels. ([Bauman, 2007](#)) Functional exercises after hospital discharge for total knee arthroplasty result in a small to moderate short-term, but not long-term, benefit. In the short term physical therapy interventions with exercises based on functional activities may be more effective after total knee arthroplasty than traditional exercise programs, which concentrate on isometric muscle exercises and exercises to increase range of motion in the joint. ([Lowe, 2007](#)) Accelerated perioperative care and rehabilitation intervention after hip and knee arthroplasty (including intense physical therapy and exercise) reduced mean hospital length of stay (LOS) from 8.8 days before implementation to 4.3 days after implementation. ([Larsen, 2008](#)) In this RCT, perioperative celecoxib (Celebrex) significantly improved postoperative resting pain scores at 48 and 72 hrs, opioid consumption, and active ROM in the first three days after total knee arthroplasty, without increasing the risks of bleeding. The study group received a single 400 mg dose of celecoxib, one hour before surgery, and 200 mg of celecoxib every 12 hours for five days. ([Huang, 2008](#)) Total knee arthroplasty (TKA) not only improves knee mobility in older patients with severe osteoarthritis of the knee, it actually improves the overall level of physical

functioning. Levels of physical impairment were assessed with three tools: the Nagi Disability Scale, the Instrumental Activities of Daily Living Scale (IADL) and the Activities of Daily Living (ADL) Scale. Tasks on the Nagi Disability Scale involve the highest level of physical functioning, the IADL an intermediate level, and the ADL Scale involves the most basic levels. Statistically significant average treatment effects for TKA were observed for one or more tasks for each measure of physical functioning. The improvements after TKA were "sizeable" on all three scales, while the no-treatment group showed declining levels of physical functioning. (George, 2008) This study showed that total knee replacement is second the most successful orthopaedic procedure for relieving chronic pain, after total hip. The study compared the gains in quality of life achieved by total hip replacement, total knee replacement, surgery for spinal stenosis, disc excision for lumbar disc herniation, and arthrodesis for chronic low back pain. Hip replacement reduced pain to levels normal for age, reduced physical functioning to within 75% normal levels, and restored quality of life to virtually normal levels. Total knee replacement was the next most successful procedure, and it all but eliminated pain, improved physical functioning to 60% normal, and restored quality of life to within 65% of normal. (Hansson, 2008) A 6-week program of progressive strength training targeting the quadriceps femoris muscle group substantially improves strength and function following total knee arthroplasty for treatment of osteoarthritis, compared to patients who received standard of care therapy; however, addition of neuromuscular electrical stimulation (NMES) to the strength training exercise did not improve outcomes. (Pettersen, 2009) Knee replacement surgery is expensive but worth the cost, especially if performed by experienced surgeons, according to a recent study. Some \$11 billion is spent on 500,000 total knee replacements each year in the United States, and the number is projected to multiply seven times by 2030 because of the aging, overweight population. Over 90% knee replacements are successful, knee pain goes away and patients become more mobile. In the study, knee replacement surgery and subsequent costs added up to \$57,900 per patient, which was \$20,800 more than was spent on those who did not get the surgery. Those who got artificial knees lived more than a year longer in good health than those who did not, and the researchers calculated the added cost per year of good-quality life at \$18,300. (Losina, 2009) In a 7-year prospective study, patients with severe osteoarthritis who had total knee replacement had significant improvements in health-related quality of life, but health outcomes were negatively influenced by obesity and postdischarge complications, and women typically did not get as much benefit from surgery as do men. Overall, 76.8% were satisfied or very satisfied with their total knee replacement, and 79.5% said they would have the surgery again in similar circumstances. (Núñez, 2009) More than 95% of patients report that they are satisfied with the outcome of their total knee replacement 1 year after surgery. Factors that increased risk for dissatisfaction were younger age, being female, valgus alignment of the knee, and posttraumatic arthritis. (Ayers, 2010) Patients undergoing total knee arthroplasty (TKA) should receive ongoing COX-2 Inhibitor therapy for 6 weeks after their procedure, according to this unpublished RCT. (Schroer, 2011)

*Unicompartmental knee replacement:* Recommended as an option. Unicompartmental knee replacement is effective among patients with knee OA restricted to a single compartment. (Zhang, 2008) In this RCT, the early results demonstrated that the unicompartmental knee replacement (UKR) group had less complications and more rapid rehabilitation than the total knee replacement (TKR) group. At five years there were an equal number of failures in the two groups but the UKR group had more excellent results and a greater range of movement. The 15 years survivorship rate based on revision or failure for any reason was 89.8% for UKR and 78.7% for TKR. The better early results with UKR are maintained at 15 years with no greater failure rate. (Newman, 2009) Long-term studies are needed to appropriately define the role of less invasive unicompartmental surgical approaches. (Borus, 2008) Unicompartmental knee arthroplasty (UKA) and total knee arthroplasty (TKA) are both recommended for the treatment of medial compartment osteoarthritis in the varus knee. Citing the arduous rehabilitation and bone loss associated with traditional knee arthroplasty, some opt for UKA, especially in young, high-demand patients. (McAllister, 2008) With appropriate patient selection, UKAs are a successful option for patients with osteoarthritis. (Dalury, 2009)

*Obesity:* After total knee arthroplasty (TKA) for osteoarthritis of the knee, obese patients fare nearly as well as their normal-weight peers. A British research team reports that higher BMI (up to 35) should not be a contraindication to TKA, provided that the patient is sufficiently fit to undergo the short-term rigors of surgery. TKA also halts the decline and maintains physical function in even the oldest age groups (> 75 years). (Cushnaghan, 2008) In this study, the rate of failure of total knee implants, at least up to 5 years after surgery, and the time to failure, were not influenced by patients' BMI, except for subjects affected by morbid obesity, but this group had a small sample size. Based on this evidence, however, it does not appear justified to give low priority to obese subjects for total knee arthroplasty, which would, as a result of restored ability to move, lead to weight loss. (Bordini, 2009) Obese patients presented for and underwent joint replacement surgery at a younger age as compared to nonobese patients. (Gandhi, 2010) Adverse events (eg, perioperative complications, post-op wound infections) occurred in 14.2% of the non-obese, 22.6% of the obese and 35.1% of the morbidly obese patients after total knee replacement. (Dowsey, 2010) A 2-year review of knee and hip replacement surgeries found that complication rates in obese patients were low,

supporting doing the procedures even in the heaviest patients, but the review did show that hospital stays were longer in those who were obese than in those who were not. ([Parks, 2010](#)) Obese patients may have clinically significant weight loss after total joint arthroplasty, since their osteoarthritis had limited their mobility and ability to exercise. When weight was corrected for natural gain, the overall study population had a trend toward weight loss, and 19.9% of the study population had clinically significant weight loss. ([Stets, 2010](#))

***Minimally invasive total knee arthroplasty:*** No significant benefit was seen in using a minimally invasive surgical technique over a standard traditional technique for total knee arthroplasty, but the study did not focus on quality-of-life outcomes (eg, length of hospital stay, reliance on pain medications, and the need for inpatient rehabilitation after discharge), in which the minimally invasive approach is purported to show an advantage. ([Wülker, 2010](#))

***Bilateral knee replacement:*** The safety of simultaneous bilateral total knee replacement remains controversial. Compared with staged bilateral or unilateral total knee replacement, simultaneous bilateral total knee replacement carries a higher risk of serious cardiac complications, pulmonary complications, and mortality. ([Restrepo, 2007](#)) Recommend that congestive heart failure and pulmonary hypertension be contraindications for bilateral total knee arthroplasty (BTKA), but not age *per se*. BTKA is seen as offering advantages over staged unilateral knee replacement surgery, including reduced time in the hospital, decreased costs, and a faster return to active life. The procedure also has been shown, however, to carry an increased risk for morbidity and mortality compared with unilateral knee replacement, with overall incidence of major in-hospital complications and mortality of 9.5%. Patients with the highest risk for adverse outcomes were those with congestive heart failure (odds ratio [OR], 5.5) compared with those without comorbidities, and those with pulmonary hypertension (OR, 4.1). Other risk factors included older age, with patients who were 65 to 74 years old or older than 75 years having about twice the likelihood of complications compared with patients 45 to 65 years old. Men also showed a 50% greater risk for complications than women. Older age, however, should not necessarily rule out patients who can otherwise benefit from bilateral knee replacement, and age by itself will be a risk factor in any kind of surgery. Factors that can increase the risk with congestive heart failure include bone particles and marrow entering the bloodstream to embolize in the pulmonary vasculature and other organs. ([Memtsoudis, 2011](#))

#### ODG Indications for Surgery -- Knee arthroplasty:

Criteria for knee joint replacement (If only 1 compartment is affected, a unicompartamental or partial replacement may be considered. If 2 of the 3 compartments are affected, a total joint replacement is indicated.):

1. Conservative Care: Medications. AND (Visco supplementation injections OR Steroid injection). PLUS
2. Subjective Clinical Findings: Limited range of motion. AND Nighttime joint pain. AND No pain relief with conservative care. PLUS
3. Objective Clinical Findings: Over 50 years of age AND Body Mass Index of less than 35, where increased BMI poses elevated risks for post-op complications. PLUS
4. Imaging Clinical Findings: Osteoarthritis on: Standing x-ray. OR Arthroscopy.

(Washington, 2003) (Sheng, 2004) (Saleh, 2002) (Callahan, 1995)  
For average hospital LOS if criteria are met, see Hospital length of stay (LOS). See also Skilled nursing facility LOS (SNF)

#### ODG hospital length of stay (LOS) guidelines:

Knee Replacement (81.54 - Total knee replacement)

Actual data -- median 3 days; mean 3.4 days ( $\pm$  0.0); discharges 615,716; charges (mean) \$44,621

Best practice target (no complications) -- 3 days

**A DESCRIPTION AND THE SOURCE OF THE SCREENING CRITERIA OR OTHER CLINICAL BASIS USED TO MAKE THE DECISION:**

- ACOEM- AMERICAN COLLEGE OF OCCUPATIONAL & ENVIRONMENTAL MEDICINE UM KNOWLEDGEBASE
- AHCPR- AGENCY FOR HEALTHCARE RESEARCH & QUALITY GUIDELINES
- DWC- DIVISION OF WORKERS COMPENSATION POLICIES OR GUIDELINES
- EUROPEAN GUIDELINES FOR MANAGEMENT OF CHRONIC LOW BACK PAIN
- INTERQUAL CRITERIA
- MEDICAL JUDGEMENT, CLINICAL EXPERIENCE AND EXPERTISE IN ACCORDANCE WITH ACCEPTED MEDICAL STANDARDS
- MERCY CENTER CONSENSUS CONFERENCE GUIDELINES
- MILLIMAN CARE GUIDELINES
- ODG- OFFICIAL DISABILITY GUIDELINES & TREATMENT GUIDELINES
- PRESSLEY REED, THE MEDICAL DISABILITY ADVISOR
- TEXAS GUIDELINES FOR CHIROPRACTIC QUALITY ASSURANCE & PRACTICE PARAMETERS
- TEXAS TACADA GUIDELINES
- TMF SCREENING CRITERIA MANUAL
- PEER REVIEWED NATIONALLY ACCEPTED MEDICAL LITERATURE (PROVIDE A DESCRIPTION)
- OTHER EVIDENCE BASED, SCIENTIFICALLY VALID, OUTCOME FOCUSED GUIDELINES (PROVIDE A DESCRIPTION)